

which carries us back farther, and still farther in time, until we reach a beginning,—no matter whether those epochs were long or short, we get in duration to a point beyond them. If you assume that matter has always existed, it is impossible to explain how it is, that these geological changes which the earth exhibits, did not take place infinite ages earlier; how it is, that all the changes which it may yet undergo, had not already occurred, far back in the illimitable past. There is but one other thing possible in conception, and it is this: that through long enduring cycles of time, the universe was formed into order, from chaos, reached its maturity, was dissolved into chaos, and again reformed, directed by no intelligence, designed for the accomplishment of no purpose. This is no doubt possible in conception, but I hope to be able to show, that the world exhibits so many instances of adaptation and coadaptation, as to make it clear that such a view, is wholly at variance with facts.

Everything in the world about us points back to a beginning. We have at present many forms of life which are comparatively modern, and which the earth, at one time, could not have sustained. There are many extinct forms for which the present condition of the world is not fitted. We can mark these changes, we can trace them back step by step, until we reach a period, when, upon our globe, no form of life could exist. Then it was in a state of chaos,—when the waters covered it, when the atmosphere was loaded with vapours, and darkness rested upon the face of the deep. How came life here? How have the successive forms of life originated? You are aware that some scientific men have maintained that life itself is a property of matter. These men have propounded the theory of spontaneous generation. The scientific world have before them an account of the numerous experiments of Cross, Pasteur, Tyndal, and others, upon this subject.

These experiments have borne testimony against the theory of spontaneous generation, and there are few scientific men of our day who hold to the doctrine. Mr. Huxley admits that those who hold to biogenesis have been victorious all along the line. But scientific men are disposed to carry back the work of indirect creation to the protoplasm. They hold that all the variations which we see in the animal and vegetable kingdom have been derived from one or two primordial forms. They maintain that all others have been evolved from these. According to this view, the work of direct creation ended with a protoplasm; that at this point derivative creation began, and that each successive type has been evolved from that which stands next below it. We have, say they, many forces operating to produce evolution amongst them, the survival of the fittest, and the influence of natural selection.

The doctrine of evolution did not spring up suddenly. We have had several theories as to the derivation of species, put forward at different times. A work was published nearly half a century ago, entitled "Vestiges of the Natural History of Creation." In this work, the writer pointed out that life, in the most highly organized animals, always began at the lowest point in the animal kingdom; and he inferred that this was the primitive form of all life; that by a law of nature, development at long intervals, passed by sudden strides into a higher species,—into one having a more complete organization, and a higher degree of intelligence, until animal life finally assumed the human form. This work was attributed to Mr. Robert Chambers. It produced a very great sensation at the time, and before it had wholly fallen into neglect, another theory of derivative creation was put forward by Mr. Charles Darwin. Perhaps I ought not to say creation, because Mr. Darwin does not know whether there is a Creator or not. He maintains, however,